

ABSTRACT OF THE DISCLOSURE

An optical apparatus and method guide EUV radiation to a predetermined surface. A radiation source supplies EUV radiation having a certain dispersion angle. An illumination optical system having a reflective integrator forms a secondary radiation source having a predetermined shape based on the EUV radiation supplied from the radiation source. A projection optical system is arranged in an optical path between a reflective mask and the predetermined surface and forms an image of the reflective mask onto the predetermined surface based on the EUV radiation from the reflective mask. The secondary radiation source having the predetermined shape has a shape that is a substantially circular shape, an annular shape, or a multipolar shape.